

52. (New) The molecule of claim 50, wherein said C-terminus comprises amino acids of said chemokine polypeptide chain that are C-terminal to the last disulfide forming cysteine of said chemokine polypeptide chain.

53. (New) The molecule of claim 52, wherein said C-terminus comprises a core helix region, and said truncation is C-terminal to said core helix region.

54. (New) The molecule of claim 50, wherein said truncation comprises a deletion of one or more amino acid residues having a polar or charged side chain relative to said wild type chemokine.

55. (New) The molecule of claim 54, wherein said amino acid residues having a polar or charged side chain are selected from arginine, lysine, aspartic acid, and glutamic acid.

56. (New) The molecule of claim 54, wherein said molecule is in an oligomeric state consisting substantially of a monomer.

57. (New) The molecule of claim 54, wherein said molecule is in an oligomeric state consisting substantially of a dimer.

58. (New) The molecule of claim 50, wherein said chemokine polypeptide chain comprises one or more amino acid residues that differ from an amino acid residue at a corresponding position in said wild type chemokine.

59. (New) The molecule of claim 58, wherein said chemokine polypeptide chain is modified at its C-terminus with one or more amino acid residues that differ from an amino acid residue at a corresponding position in said wild type chemokine.

60. (New) The molecule of claim 59, wherein said C-terminus is capped with an amino acid of the formula  $\text{-NH-CH(R)-C(=O)-NH}_2$ , where R is an amino acid side chain that is the same or different from the side chain of the amino acid in said wild type chemokine.

61. (New) The molecule of claim 58, wherein said chemokine polypeptide chain is modified at its N-terminus with one or more amino acid residues that differ from an amino acid residue at a corresponding position in said wild type chemokine.
62. (New) The molecule of claim 61, wherein said chemokine polypeptide chain is modified at its N-terminus with a hydrophobic aliphatic chain.
63. (New) The molecule of claim 62, wherein said N-terminus is capped with an amino acid of the formula  $J-X-NH-CH(R)-C(=O)-$ , where R is an amino acid side chain that is the same or different from the side chain of the amino acid in said wild type chemokine, X is a linker, and J is said hydrophobic aliphatic chain.
64. (New) The molecule of claim 63, wherein X comprises an amino acid derivative.
65. (New) The molecule of claim 64, wherein J comprises the formula  $CH_2-(CH_2)_n-$ , where  $n = 0$  to 20.
66. (New) The molecule of claim 50, wherein said chemokine polypeptide chain is covalently modified with one or more polymers.
67. (New) The molecule of claim 66, wherein said polymer is linear.
68. (New) The molecule of claim 66, wherein said polymer is branched.
69. (New) The molecule of claim 66, wherein said polymer comprises an ethylene oxide repeat unit of the formula  $-CH_2-CH_2-O-$ .
70. (New) The molecule of claim 69, wherein said polymer comprises polyethylene glycol.
71. (New) The molecule of claim 66, wherein said polymer comprises a polyamide.
72. (New) The molecule of claim 66, wherein said polymer comprises a fatty acid.

73. (New) The molecule of claim 50, wherein said chemokine polypeptide chain comprises an amino acid sequence that is substantially homologous to the amino acid sequence of said wild type chemokine, and wherein the molecule is an agonist or antagonist of said wild type chemokine.

74. (New) The molecule of claim 50, wherein said wild type chemokine is a CC Chemokine.

75. (New) The molecule of claim 50, wherein said wild type chemokine is a CXC Chemokine.

76. (New) The molecule of claim 50, wherein said wild type chemokine is selected from the group consisting of Rantes, MIP-1 alpha, MIP-1beta, and MCP-1.

77. (New) The molecule of claim 50, wherein said chemokine polypeptide chain comprises an amino acid sequence as depicted in SEQ ID NO: 1.

78. (New) The molecule of claim 50 wherein said wild type chemokine is selected from the group consisting of NK1, NK2, NK3, NK4, NK5, NK6, NK7, NK8, NK9, NK10, NK11, NK12 and NK13.

79. (New) The molecule of claim 50, wherein said chemokine polypeptide chain is produced by chemical synthesis.

80. (New) The molecule of claim 79, wherein said chemical synthesis comprises the chemoselective ligation of non-overlapping peptide segments of said chemokine polypeptide chain.

81. (New) The molecule of claim 80, wherein said chemoselective ligation is native chemical ligation.

82. (New) A pharmaceutical composition comprising a synthetic chemokine according to claim 50, or a pharmaceutically acceptable salt thereof and a pharmaceutical excipient.

83. (New) The pharmaceutical composition according to claim 82, wherein said excipient is selected from the group consisting of a buffer, a carrier protein, an amino acid, a detergent, a lipid, a water-soluble polymer, and a preservative.

84. (New) The pharmaceutical composition according to claim 82, which comprises a bioactive agent in addition to said molecule.

85. (New) A method of treating a disease state in mammals that is alleviated by treatment with a chemokine receptor antagonist, said method comprising administering to a mammal in need of such a treatment a therapeutically effective amount of a molecule according to claim 50.

86. (New) The method of claim 85, wherein said chemokine receptor is down regulated as a result of binding of said molecule to said chemokine receptor.

87. (New) The method of claim 85, wherein the mammal has a disorder selected from the group consisting of AIDS, psoriasis, multiple sclerosis, cancer, asthma, allergic rhinitis, atopic dermatitis, atheroma, atherosclerosis, or rheumatoid arthritis.

88. (New) The method of claim 87, wherein said method of treating in said mammal is incident to a therapy selected from the group consisting of antiviral therapy, psoriasis therapy, multiple sclerosis therapy, cancer chemotherapy, asthma therapy, allergic rhinitis therapy, atopic dermatitis therapy, atheroma therapy, atherosclerosis therapy, and rheumatoid arthritis therapy.

89. The method of claim 88, wherein the molecule is administered before, concurrently with, or after said therapy.

90. (New) A method of producing a synthetic chemokine in a substantially purified oligomeric form, said method comprising: synthesizing a protein pool containing a synthetic chemokine protein comprising a chemokine polypeptide chain having an N-terminus and a C-terminus, said chemokine polypeptide chain comprising (i) an amino acid sequence and cysteine pattern corresponding to a wild type chemokine, and (ii) a C-terminal truncation relative to said wild type chemokine; and purifying from said protein pool one or more oligomeric forms of said